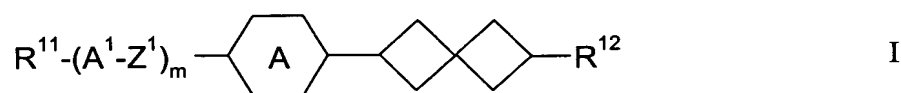



CLAIMS

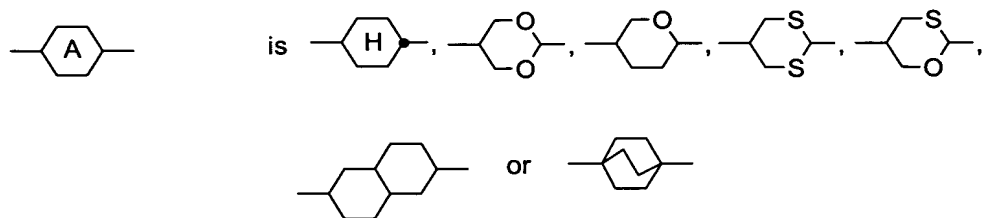
1. A liquid-crystalline medium comprising a mixture of polar compounds of negative dielectric anisotropy, which comprises at least one compound of the formula I



in which

R^{11} is an alkyl or alkenyl radical having 1 to 15 carbon atoms which is unsubstituted, monosubstituted by CN or CF_3 or monosubstituted to perhalo-substituted by halogen, where one or more CH_2 groups in these radicals are optionally replaced by -O-, -S-, , $-C\equiv C-$, $-CO-O-$ or $-O-CO-$ in such a way that O atoms are not linked directly to one another,

- A^1
- a) is a 1,4-cyclohexenylene or 1,4-cyclohexylene radical, in which one or two non-adjacent CH_2 groups are optionally replaced by -O- or -S-,
 - b) a 1,4-phenylene radical, in which one or two CH groups are optionally replaced by N,
 - c) a radical selected from the group consisting of piperidine-1,4-diyl, 1,4-bicyclo[2.2.2]octylene, naphthalene-2,6-diyl, decahydronaphthalene-2,6-diyl, 1,2,3,4-tetrahydronaphthalene-2,6-diyl, phenanthrene-2,7-diyl and fluorene-2,7-diyl,
- where the radicals a), b) and c) are optionally monosubstituted or polysubstituted by halogen atoms,

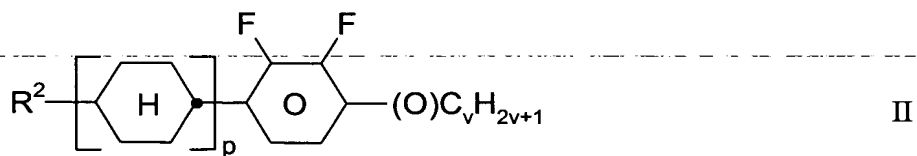


Z^1 is $-\text{CO}-\text{O}-$, $-\text{O}-\text{CO}-$, $-\text{CF}_2\text{O}-$, $-\text{OCF}_2-$, $-\text{CH}_2\text{O}-$, $-\text{OCH}_2-$, $-\text{CH}_2\text{CH}_2-$, $-(\text{CH}_2)_4-$, $-\text{C}_2\text{F}_4-$, $-\text{CH}_2\text{CF}_2-$, $-\text{CF}_2\text{CH}_2-$, $-\text{CH}=\text{CF}-$, $-\text{CF}=\text{CH}-$, $-\text{CF}=\text{CF}-$, $-\text{CH}=\text{CH}-$, $-\text{C}\equiv\text{C}-$ or a single bond,

R^{12} is alkenyl having 2-7 carbon atoms, and

m is 0, 1 or 2.

2. A liquid-crystalline medium according to Claim 1, which additionally comprises one or more compounds of the formula II



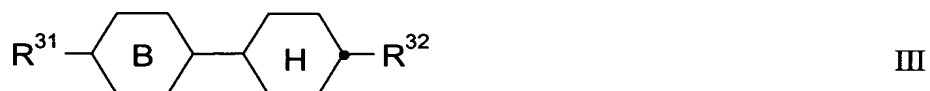
in which

R^2 is an alkyl or alkenyl radical having 1 to 15 carbon atoms which is unsubstituted, monosubstituted by CN or CF_3 or monosubstituted to perhalo-substituted by halogen, where one or more CH_2 groups in these radicals are optionally each independently of one another, replaced by $-\text{O}-$, $-\text{S}-$, $-\text{C}\equiv\text{C}-$, $-\text{CO}-$, $-\text{CO}-\text{O}-$, $-\text{O}-\text{CO}-$ or $-\text{O}-\text{CO}-\text{O}-$ in such a way that O atoms are not linked directly to one another,

p is 1 or 2, and

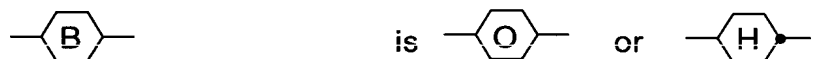
v is from 1 to 6.

3. A liquid-crystalline medium according to Claim 1, which additionally comprises one or more compounds of the formula III

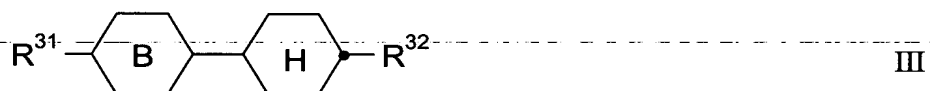


in which

R^{31} and R^{32} are each, independently of one another, a straight-chain alkyl, alkenyl, alkenyloxy or alkoxy radical having 1 to 12 carbon atoms, and

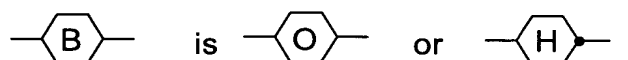


4. A liquid-crystalline medium according to Claim 2, which additionally comprises one or more compounds of the formula III



in which

R^{31} and R^{32} are each, independently of one another, a straight-chain alkyl, alkenyl, alkenyloxy or alkoxy radical having 1 to 12 carbon atoms, and



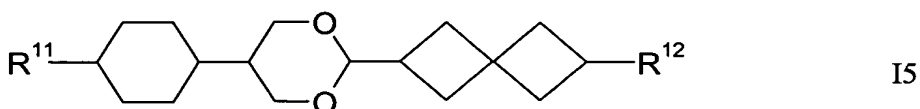
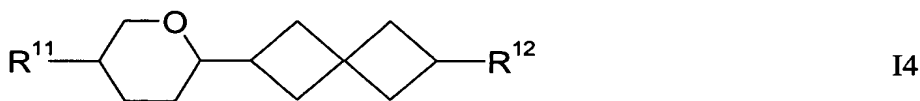
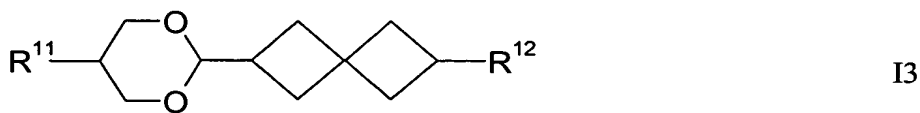
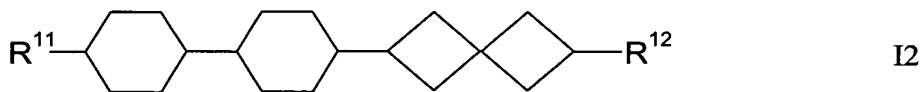
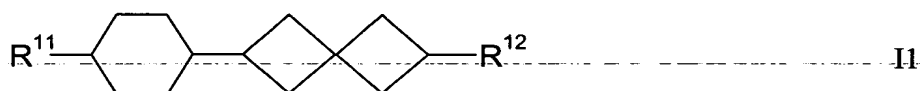
5. A liquid-crystalline medium according to Claim 1, which comprises two or more compounds of the formula I.

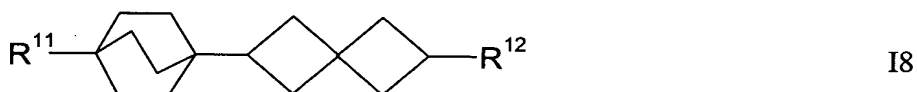
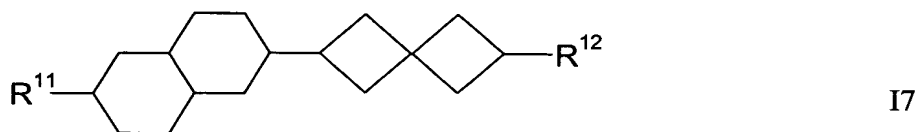
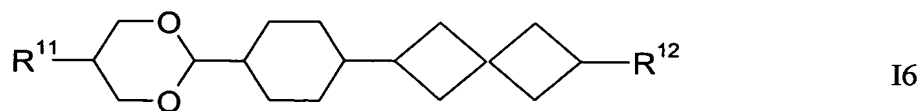
6. A liquid-crystalline medium according to Claim 1, wherein the proportion of compounds of the formula I in the mixture as a whole is at least 5% by weight.

7. A liquid-crystalline medium according to Claim 2, wherein the proportion of compounds of the formula II in the mixture as a whole is at least 20% by weight.

8. A liquid-crystalline medium according to Claim 3, wherein the proportion of compounds of the formula III in the mixture as a whole is at least 5% by weight.

9. A liquid-crystalline medium according to Claim 1, which comprises at least one compound selected from those of the formulae I1 to I8:

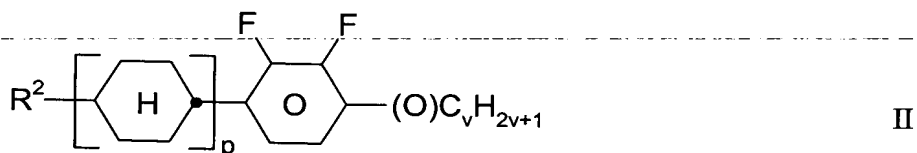




in which

R^{11} and R^{12} are as defined.

10. A liquid-crystalline medium according to Claim 9, which additionally comprises one or more compounds of the formula II



in which

R^2 is an alkyl or alkenyl radical having 1 to 15 carbon atoms which is unsubstituted, monosubstituted by CN or CF_3 or monosubstituted to perhalo-substituted by halogen, where one or more CH_2 groups in these radicals are optionally each independently of one another, replaced by -O-, -S-, $-C\equiv C-$, $-CO-$, $-CO-O-$, $-O-CO-$ or $-O-CO-O-$ in such a way that O atoms are not linked directly to one another,

p is 1 or 2, and
v is from 1 to 6.

11. A liquid-crystalline medium according to Claim 9, which consists essentially of

5-30 % by weight of one or more compounds of the formula II
and
20-70 % by weight of one or more compounds of the formula II.

12. An electro-optical display having active matrix addressing based on the ECB or IPS effect, which comprises, as dielectric, a liquid-crystalline medium according to Claim 1.

13. An electro-optical display having active matrix addressing based on the ECB or IPS effect, which comprises, as dielectric, a liquid-crystalline medium according to Claim 2.

14. An electro-optical display having active matrix addressing based on the ECB or IPS effect, which comprises, as dielectric, a liquid-crystalline medium according to Claim 3.

15. An electro-optical display having active matrix addressing based on the ECB or IPS effect, which comprises, as dielectric, a liquid-crystalline medium according to Claim 10.

16. An electro-optical display having active matrix addressing based on the ECB or IPS effect, which comprises, as dielectric, a liquid-crystalline medium according to Claim 11.
